



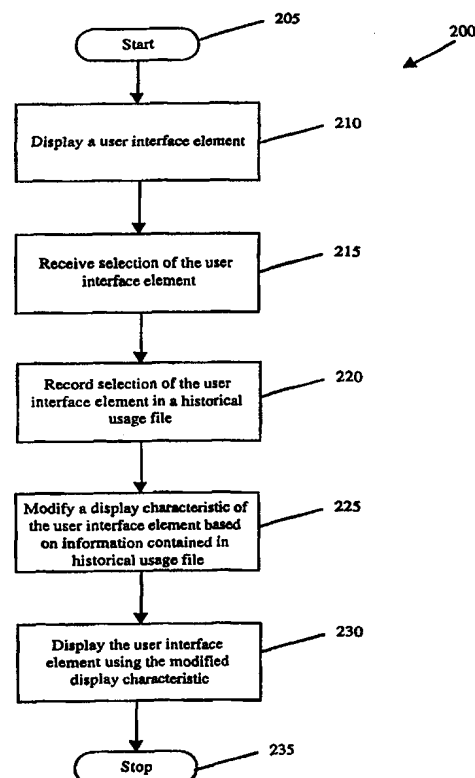
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(21) International Application Number: PCT/US99/12524 (22) International Filing Date: 4 June 1999 (04.06.99) (30) Priority Data: 09/098,725 17 June 1998 (17.06.98) US (71) Applicant: MICROSOFT CORPORATION [US/US]; One Microsoft Way, Redmond, WA 98052 (US). (72) Inventors: ARCURI, Michael, P.; 1110 18th Avenue, Seattle, WA 98122 (US). HACHAMOVITCH, Dean; 8520 Hunts Point Lane, Bellevue, WA 98004 (US). JOHNSON, JEFFREY, J.; 2436 158th Place, N.E., Bellevue, WA 98008 (US). (74) Agents: PETTY, W., Scott et al.; Jones & Askew, LLP, 2400 Monarch Tower, 3424 Peachtree Road, N.E., Atlanta, GA 30326 (US).		(81) Designated States: JP, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i> <i>With amended claims.</i> Date of publication of the amended claims: 10 February 2000 (10.02.00)

(54) Title: METHOD FOR ADAPTING USER INTERFACE ELEMENTS BASED ON HISTORICAL USAGE

(57) Abstract

Adapting user interface elements based on historical usage. A user interface element is displayed in a menu. In response to receiving an indication of the selection of the user interface element, the selection is stored in a historical usage file that maintains usage information associated with the selected user interface element. Usage information includes, but is not limited to, frequency, most recently used and recency information. The display characteristic of the user interface element can be modified based on the usage information stored in the historical usage file for the selected user interface element. The display characteristics include, but are not limited to, character size, font type, style, graphic. The selected user interface element is then displayed using the modified display characteristic.



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AMENDED CLAIMS

[received by the International Bureau on 17 December 1999 (17.12.99);
original claims 1-15 replaced by new claims 1-13 (4 pages)]

- 5 1. In a computer system running a program module comprising
a user interface environment, a method for modifying a user interface
element for a user interface of the program module in response to usage
information, comprising the steps of:
- receiving a selection of the user interface element having a display
10 characteristic;
- storing the selection of the user interface element in a historical
usage file for maintaining usage information regarding the user interface
element;
- modifying the display characteristic of the user interface element
15 based on the usage information contained in the historical usage file;
- displaying the user interface element using the modified display
characteristic; and
- modifying the user interface environment, such that positioning a
cursor proximate to the user interface element creates an attractive force
20 between the user interface element and the cursor, wherein the strength of
the attraction is based on the usage information contained in the historical
usage file.

2. The method of Claim 1, wherein the step of modifying the display characteristics of the user interface element based on information contained in the historical usage file comprises the steps of:

- calculating a selection frequency of the user interface element; and
- 5 modifying the display characteristic of the user interface element based on the calculated selection frequency.

3. The method of Claim 1, wherein the step of modifying the user interface environment based on information contained in the historical usage file comprises:

- calculating a selection frequency of the user interface element; and
- modifying the strength of attractive force between the user interface element and the cursor based on the calculated selection frequency.

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4. The method of Claim 2, wherein the step of calculating the selection frequency comprises the steps of:

- determining an average selection frequency value of multiple elements of the user interface, wherein the user interface element is one
- 20 of the multiple user interface elements;
- defining frequency groups; and
- assigning each of the multiple user interface elements to one of the frequency groups.

5. The method of Claim 1, wherein the step modifying the display characteristics of the user interface element based on information contained in the historical usage file comprises the steps of:

calculating a most recently used selection value for the user
5 interface element; and

modifying the display characteristic of the user interface element based on the most recently used selection value.

6. The method of Claim 1, wherein the step of modifying the
10 user interface environment based on information contained in the historical usage file comprises:

calculating a most recently used selection value for the user
interface element; and

modifying the strength of the attractive force between the user
15 interface element and the cursor based on the most recently used selection value.

7. The method of Claim 1 further comprising the step of storing the modified display characteristic, wherein the stored modified display
20 characteristic is accessible for multiple session of the program module.

8. The method of Claim 1, wherein the usage information of the historical usage file compares information defining selection of the user interface element by multiple users.

9. The method of Claim 1, wherein the user interface element is a hyperlink contained in a web page.

5 10. The method of Claim 1, wherein the display characteristic comprises a font type.

11. The method of Claim 1, wherein the display characteristic comprises a font style.

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12. The method of Claim 1, wherein the display characteristic comprises a character size.

13. The method of Claim 1, wherein the display characteristic
15 comprises a graphic.